**Tool:** Doloplus 2  
**Tool developer:** Wary, B. and The Doloplus Group  
**Country of origin:** France

<table>
<thead>
<tr>
<th>Conceptualization Panel rating: 1</th>
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<tbody>
<tr>
<td><strong>Purpose</strong></td>
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<tr>
<td><strong>Conceptual basis</strong></td>
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<tr>
<th>Item Generation</th>
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| **Tool items** | There are three subscales with a total of 10 items:  
- **Somatic reactions** (5 items)  
  Somatic complaints  
  Protective body postures adopted at rest  
  Protection of sore areas  
  Expression  
  Sleep pattern  
- **Psychomotor reactions** (2 items)  
  Washing and/or dressing  
  Mobility  
- **Psychosocial reactions** (3 items)  
  Communication  
  Social life  
  Behavioral problems  
Each of the ten behavioral items is leveled with four descriptions of behaviors rated on a four point scale from 0 to 3 representing increasing severity of pain. Individual item scores are summed to arrive at a total score, which ranges from 0 to 30 points. Five points is the threshold stated as indicating pain. |
| **Item generation process** | Doloplus was developed by Wary et al., (1993) based The Doleur Enfant (Gustave Roussy), a scale for young children and was adapted for use in older adults. Doloplus 2 was developed by the Doloplus Group. |

<table>
<thead>
<tr>
<th>Content Validity</th>
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<tbody>
<tr>
<td><strong>-Panel Commentary</strong></td>
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</table>
Comprehensiveness and clarity of items
The tool covers 5 of 6 pain behavior categories in the AGS Persistent Pain Guidelines: Facial expression, verbalizations/ vocalizations, body language, changes in activity patterns or routines, changes in interpersonal interactions. However, the category mental status change is not addressed.

Several items are unclear in the English translation of the Doloplus 2. Several items seem foreign when compared to the words and expressions most commonly used in English literature on pain in dementia (e.g. “repetitive reactive behavior” vs “agitation or aggression”; “resists all persuasion” vs. “resistance to care”. “Protection of sore areas” is commonly referred to as “guarding” in English and “expression” is more commonly referred to as “facial expression”. This indicates that the English translation needs further refinement. Although the French version may have face validity, this has not been established for the English translation.

It is unclear whether the lack of clarity in items is solely due to the translation or whether this lack of clarity is also present in the original French version.

No description of the item generation process is available in English for the original Doloplus or for Doloplus 2.

Subjects
Panel rating: 2

Many tests have been conducted at various sites in France and Switzerland.

Internal consistency was tested in a pooled sample of 510 elders from all centers participating in the Doloplus Group. Average age of subjects was 82.5 (± 8.0), range 66-96 years, with 173 males and 337 females.

Interobserver reliability was tested in two separate samples at palliative care hospitals at Metz-Thionville and Marseille respectively. The Metz-Thionville study included 43 patients with an average age of 73.5 (± 7.21) with 28 males and 15 females. The Marseille study included 41 patients with average age 82 (± 8.3) with 9 males and 32 females.

Test–retest reliability was evaluated in a mixed sample of 83 patients with 16 males and 67 females. Average age was 82.5 (± 8.0), range 66-96 years with short, medium and long stay hospitalization as well as palliative care. Data from these divergent settings were pooled.

Convergent validity was evaluated in various geriatric centers or palliative care units in France and Switzerland in a mixed sample of 143 elders, 44 males and 99 females with an average age of 80.7 years (± 8.8), range 65-101.

Sensitivity was tested at 11 centers. The sample included 183 elders with an average age of 80.7 (± 8.6), range of 65-101, 73 males and 110 females.

-Panel Commentary
The French version of the tool has been tested in diverse populations and settings including long term care, geriatric clinics and palliative care in France and Switzerland. There is no mention of possible cross cultural issues. No information on ethnic/racial diversity is available. It is not mentioned how the tool developers controlled for variability between sites.
Although a number of studies have been conducted on the Doloplus 2, little information on the samples is available in English. For example, the method for assessment of dementia severity is not reported for each sample. Moreover, overlap of samples for evaluation procedures is uncertain.

Using 5 subjects per tool item as a rule of thumb, a minimum sample size of 50 (10 items x 5 subjects) would be needed. Thus, the samples presented above are sufficient for tool evaluation.

No evaluation reports in English speaking populations are available.

### Administration, Scoring, Feasibility

<table>
<thead>
<tr>
<th>Administration, Scoring, Feasibility</th>
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<tbody>
<tr>
<td>Scoring of items (see under “item generation” above).</td>
</tr>
<tr>
<td>Individual trajectory of pain is emphasized.</td>
</tr>
<tr>
<td>The score is viewed as individual and is not intended for comparison between patients. Change in the score over time is important.</td>
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<tr>
<td>If there is doubt about the presence of pain, a therapeutic test is recommended.</td>
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<tr>
<td>Instructions for administration of the tool have been developed.</td>
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<tr>
<td>According to tool developers the tool takes at most a few minutes to administer.</td>
</tr>
<tr>
<td>The tool is recommended for health-care, social care or home use.</td>
</tr>
<tr>
<td>Scoring by several caregivers is recommended. Also family and other persons are encouraged to contribute.</td>
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</table>

**Panel Commentary**

Method of administration is clearly described.

Scoring procedures are clearly described.

Interpretation of tool score is unclear. It is not clear how the score of 5 to indicate pain was determined. The instructions indicate that if an item is inappropriate it is not scored. However, it is not noted how the overall score of the tool is affected when some items are not scored.

**Clinical utility**

- **Time:** The tool developers indicate the tool only takes a few minutes to complete, but no data are reported.
- **Skill needed:** The tool developers have intended that the tool may be used by health care providers, personnel in social care as well as family of the elder, but training requirements to assure reliable results are not reported.

### Reliability

<table>
<thead>
<tr>
<th>Reliability</th>
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<tbody>
<tr>
<td>Internal consistency</td>
</tr>
<tr>
<td>(See sample description under “subjects” above.)</td>
</tr>
<tr>
<td>Cronbach alpha coefficient = 0.82</td>
</tr>
<tr>
<td>If any one of 10 items is eliminated, Cronbach alpha falls below 0.82.</td>
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<tr>
<td>Interrater reliability</td>
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<tr>
<td>Interobserver reliability was tested in two separate studies at palliative care hospitals at Thionville and Marseille respectively:</td>
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<tr>
<td>For both studies the paired sample t-test was used to analyze the data.</td>
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</table>
Thionville
(See sample description under “subjects” above.)
Scorer A: Total average score 11.4/30 (± 5)
Scorer B: Total average score 10.9/30 (± 4.8)

Marseille
(See sample description under “subjects” above.)
Scorer A: Total average score 17.3/30 (± 4.9)
Scorer B: Total average score 17.1/30 (± 4.6).

Test-retest reliability
Test-retest reliability is reported.
(See sample description under “subjects” above.)

Pain scores were measured at 2 times at 4 hour intervals.
T-test was conducted:
T1:  average score: 9.33/30 (±5.17)
T2 (+ 4h): average score: 9.36/30 (±5.47)
Student’s t-test was not statistically significant.

-Panel commentary

Internal consistency
Little information is available about the sample used to arrive at the results especially as relates to cognitive status of patients.
No information is provided regarding raters of the patients.
Cronbach alpha coefficient is appropriate for the data and the correlation coefficient is strong.

Interrater reliability
No information on the cognitive status of the patients is provided.
No information on the raters is provided.
The data do not appear to be analyzed by subject. Average scores and t-tests do not adequately assess interrater reliability of the tool. Data from two raters independently and simultaneously assessing one subject would be considered appropriate. No correlation coefficient is provided.

Test-retest reliability
Scores from the same subject measured at two different times were measured.
The interval of 4 hours was appropriate if no intervention occurred. Average scores were calculated and Student’s t-test was conducted. However, data on the t-test were not reported. Moreover, correlation would have been more appropriate.
Information on how the test-retest was conducted is limited. No information is provided as to whether subjects received any pain treatment between measurements.
There is also no information on the qualifications of the raters.
Data were pooled from various settings. There is no report on how the tool developers controlled for variability across settings.

Validity: Criterion or construct
Panel rating: 1

Construct validity/ Criterion related validity
Convergent validity
(See sample description under “subjects” above.)
Doloplus 2 and VAS scores were compared.
VAS scores varied from 0 to 10 with a average score of 5.46 (± 2.27).
The convergent validity of the VAS and Doloplus scale was significant (p<0.001).

Sensitivity
(See sample description under “subjects” above.)
### Panel commentary

The information available in English on criterion related validity and/or construct validity—especially as pertains to methodology used—is too limited to allow evaluation. For example, information on pain conditions, pain raters, times of evaluation and relationship to pain treatment are not available.

Use of the VAS by elders with dementia as a gold standard for comparison is questionable. If the VAS is used by the caregiver, question also remains regarding ability/accuracy of health care provider judgments of severity in this population.

### Summary of panel evaluation of pain assessment tool

The Doloplus 2 is a comprehensive tool for assessing pain in nonverbal elders. The tool addresses many key indicators noted in the literature and AGS Guidelines. Via their website information the tool developers report extensive testing in Europe. However, information in English is limited and available reports do not provide sufficient detail on which to base sound judgment of the tool evaluation. Translation issues are evident and further study or description regarding the use of Doloplus 2 in English-speaking populations is needed.

### Sources of evidence


Doloplus website: http://www.doloplus.com

### Key to panel rating

- **3=** Available evidence is strong
- **2=** Available evidence supports need for further testing
- **1=** Available evidence is insufficient and/or tool revisions are needed
- **0=** Evidence is absent

### Critique completed by:

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